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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/026,400	02/19/98	MORI	S 2185-0226P-S

002292 HM22/0706  
BIRCH STEWART KOLASCH & BIRCH  
P O BOX 747  
FALLS CHURCH VA 22040-0747

EXAMINER

ZAGHMOUT, O

ART UNIT

PAPER NUMBER

1638

DATE MAILED:

07/06/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.

09/026,400

Applicant(s)

Mori et al.

Examiner

Ousama Zaghmout

Group Art Unit

1638



☒ Responsive to communication(s) filed on Apr 14, 2000.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 2-20 is/are pending in the application.

Of the above, claim(s) 14-20 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 2 and 5-13 is/are rejected.

☒ Claim(s) 3 and 4 is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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**Status of Application**

1. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1638.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The amendment filed on 04/14/2000 has been received and entered (Paper No. 13).

4. Status of the Claims:

Claim 1 has been canceled.

Claims 2-13 have been considered on the merit.

Claims 14-20 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 10.

Claims 2-20 are pending.

5. This application contains claims 14-20 are drawn to an invention nonelected with traverse in Paper No.10 . A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

**Response to Remarks**

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1. The Examiner would like to bring to attention of Applicants that the support for the new amendment was in page 28, not page 6, lines 14-18.
2. The objection to claim 2 for depending upon nonelected claim 1 has been withdrawn in view of the amendment of claim 2.
3. Sequence listing: The sequence listing submitted on July 26, 1999 was received and entered the database. However, there are some sequences without sequence identifiers such as those listed in page 25. Applicants must comply with sequence rules as stated in the MPEP (37 CFR 1.821 Nucleotide and/or amino acid sequence disclosures in patent applications). Please see also 2422.01: Definitions of Nucleotide and/or Amino Acids for Purpose of Sequence Rules.

A one- month time period, extendable under 37 CFR 1.136(a) and separate from the six month statutory period in which to respond to the Office action, is hereby set.
4. Applicants' comments regarding the priority document in page 5 of the Remarks is noted.

**Claim Rejections - 35 USC § 112**

**112 2nd paragraph**

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1. The rejection of claim 2 under 35 U.S.C. § 112, second paragraph, as being vague and indefinite has been withdrawn in view of amendment of claim 2.

**Ist paragraph**

1. Claims 2 and 5-13 (amended) remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation of hybridization conditions in part (b) of amended claim 2, in the absence of recitation of functional activity, and in the absence of Applicants' recovery of more than one gene sequence or in the absence of Applicants' utilizing the exemplified barley gene as a hybridization probe to recover similar genes from other species, fails to provide an adequate written description of the claimed invention. Amendment of claim 2 to insert--, said nucleotide sequence encoding a protein having nicotianamine aminotransferase activity-- would obviate the rejection.

2. The rejection of Claims 2-10 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the nucleotide sequences of SEQ ID: 3 and 4 which encode the amino acid sequences of SEQ ID: 1 and 2, does not disclose other nucleotide sequences encoding amino acid sequences with a single or plural amino acid deleted, replaced

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or added, and having the nicotianamine aminotransferase activity has been withdrawn in view of the amendment of claim 2.

3. Claims 11-13 remain rejected under 35 U.S.C. 112, first paragraph, because the specification does not enable the invention as claimed for the same reasons of record stated in the previous Office action. In that respect, the specification does not provide those with skill in the art if the transgenic plant will remain alive after absorption of large excesses of iron which chelate other essential elements in the plant such as phosphorous. The specification does not provide a person with skill in the art if the nucleotide sequences claimed will mediate other steps that follow the absorption of the iron, such as transport or storage. The specification does not describe if the absorbed iron will be partitioned properly in cell compartments without causing any toxic effect. As such, one wishing to practice the invention is left to proceed through trial-and-error to see what will work and what will not. Hence, due to the lack of any working examples of the inventions, and the inability of one skilled in the art to predict which if any of all possible nucleic acid molecules will be useful in the manner suggested, and the unpredictability of the field, it would require undue experimentation to practice the invention.

### Conclusion

Claims 2-10 are deemed free of prior art since the prior art failed to teach the claimed nucleotide sequences or their use as claimed.

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Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Future Correspondence

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ousama M-Faiz Zaghmout whose telephone number is (703) 308-9438. The Examiner can normally be reached Monday through Friday from 7:30 am to 5:00 pm (EST).


If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Paula Hutzell, can be reached on (703) 308-4310. The fax phone number for the group is (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application should be directed to THE MATRIX CUSTOMER SERVICE CENTER whose telephone number is (703) 308-0196.

Ousama M-Faiz Zaghmout Ph.D.

June 27, 2000

DAVID T. FOX  
PRIMARY EXAMINER  
GROUP ~~180~~ 1638

  
for Gary Benzin, PhD